MP2-11

Coronary artery variants/anomalies in patients with tetralogy of Fallot: should we look more carefully? A retrospective study of 226 Egyptian patients (A single centre experience)

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Background: Coronary artery anatomy has an important impact on the surgical management of patients with tetralogy of Fallot (TOF). The commonest reported anomaly is the left anterior descending artery (LAD) arising from the right coronary artery (RCA) and crossing right ventricle out flow tract (RVOT). Other variants/anomalies are less reported and may be underestimated. Therefore, their clinical influence has not been investigated yet.
Aim: To study the origin and course of each coronary artery in Egyptian patients with TOF, and report the incidence of different coronary artery variants/anomalies.
Methods: A retrospective study to evaluate all coronary arteries, origin and course, by MSCT in TOF patients presented to Aswan Heart Centre during the period from 2013 to 2016.
Results: 226 TOF patients with median age 5 years (range between 9 months – 40 years), male 124 (55%).
Group I: Normal coronary arteries anatomy was reported in 155 patients (67%). ***Group II:*** Coronary artery crossing the RVOT was reported in 23 patients (11%) [Left main artery (LMA) arising from right coronary cusp(RCC) (5 patients) ,LAD arising from RCC (9 patients), large conal branch (8 patients), and RCA arising from left main artery(LMA)(1 patient)] Figure 1-I. ***Group III***: Other coronary artery variants/anomalies were reported in 49 patients (22%) [bridging of LAD (25 patients), ectasia (20 patients), LAD arising from RCC passing between aorta and pulmonary artery in a malignant course (1 patient), RCA arising from LMA passing between aorta and right atrium(2 patients),Left circumflex artery from RCA passing between aorta and left atrium (1 patient)] Figure 1-II.
Conclusion: In patients with TOF; LAD crossing the RVOT is an important coronary anomaly; however, it is not the commonest one. In this study, other coronary variants/anomalies (especially bridging and ectasia) have been reported to be more frequent. Those other variants/anomalies should be carefully evaluated and their clinical influence should be further investigated.

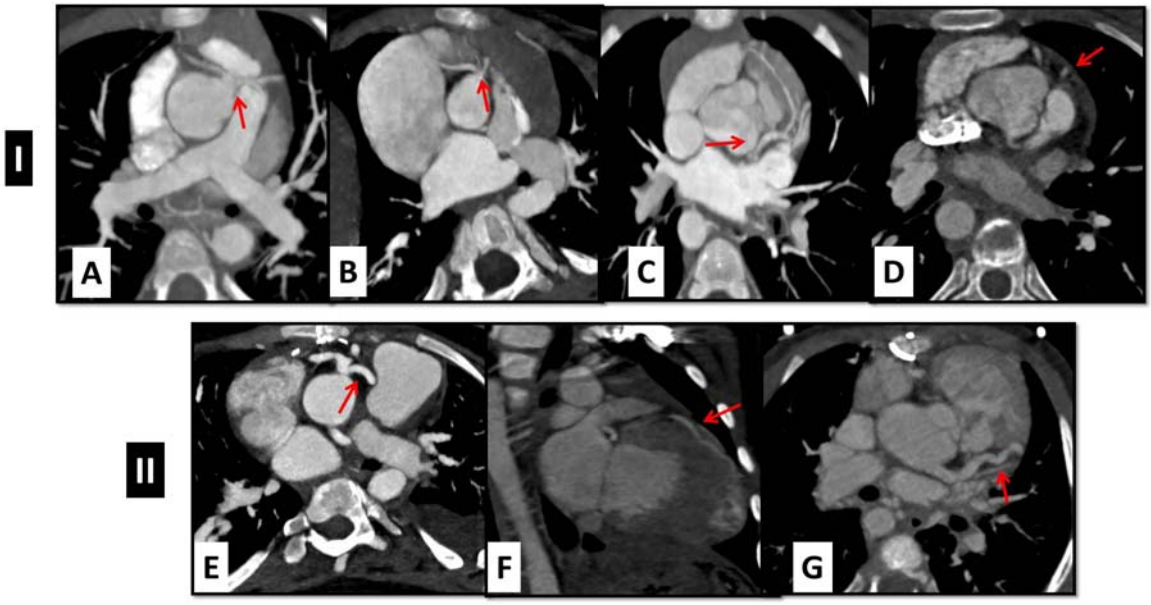

Figure 1: I) shows a coronary artery crossing the RVOT, A) LMA arises from RCC, B)LAD arises from RCC, C) RCA arises from LMA, D) large conal branch.
II) Shows other coronary artery variants/anomalies, E) LAD arises from RCC and passes between aorta and pulmonary artery , F) bridging of LAD , G) ectatic LAD. RVOT: right ventricular outflow tract , LMA: left main artery, LAD: left anterior descending artery, RCC: right coronary cusp, RCA:right coronary artery.